



Mo5176new.txt

<110> Bayer Aktiengesellschaft

<120> Nucleic Acids which encode  
insect acetylcholine receptor subunits

<130> Le A 33 020-Foreign Countries

<140> US/09/303,232

<141> 1999-04-30

<150> DE 198 19 829.9

<151> 1998-05-04

<160> 14

<170> PatentIn Ver. 2.1

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<213> Drosophila melanogaster

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<222> (372)..(2681)

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aaacaataaa gcatatactt gccatattga tataaaggga aatcgtgaaa aggcggtgaa 180
aatttcgtaa gattagttgg tattaagggc agcccatgca cacagctaaa aagggaacta 240
aaaaaacccc gcacagaaca atgaaagctg cagcagctgg ataaggccga caaaaccgaa 300
aattatatta ttgtaatcta gtagagagca gacaacatat ccgctggcaa caaccaacac 360
cgaaagagac t atg aaa aat gca caa ctg aaa ctg act gaa gtt gac gat 410
          Met Lys Asn Ala Gln Leu Lys Leu Thr Glu Val Asp Asp
          1             5             10
gat gag ctg tgg ctg gca gta aga tta gcg cac tgc agc agc aac ttt 458
Asp Glu Leu Trp Leu Ala Val Arg Leu Ala His Cys Ser Ser Asn Phe
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agc agc agt agc agc aca aga acc acc agc agc aac cag agg cac aac 506
Ser Ser Ser Ser Ser Thr Arg Thr Thr Ser Ser Asn Gln Arg His Asn
    30             35             40             45
cag caa ctc aca aca ctg caa cca agg agc tta agt aca aaa cac cac 554
Gln Gln Leu Thr Thr Leu Gln Pro Arg Ser Leu Ser Thr Lys His His
          50             55             60
agc aac att gca agc gag cag cac aat agc cag caa cag gag cca gca 602
Ser Asn Ile Ala Ser Glu Gln His Asn Ser Gln Gln Gln Glu Pro Ala
          65             70             75
tcg aag gac gag gat gta gcc aac cac ggt aga agc aat gac cag cag 650
Ser Lys Asp Glu Asp Val Ala Asn His Gly Arg Ser Asn Asp Gln Gln
          80             85             90
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## Mo5176new.txt

|   |      |
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| acg cat ctg caa cag cta gac agc agc aac atg ttg tcg cca aag aca             | 698  |
| Thr His 95 Leu Gln Gln Leu Asp 100 Ser Ser Asn Met Leu Ser Pro Lys Thr 105  |      |
| gcc gca gca gca act gct gcc ggc gat gaa gca aca acc caa caa cca             | 746  |
| Ala Ala Ala Ala Thr 115 Ala Ala Gly Asp Glu Ala Thr Thr Gln Gln Pro 125     |      |
| aca aac ata aga ctg tgt gca cgc aag cga caa cga ttg cgt cgc cga             | 794  |
| Thr Asn Ile Arg Leu 130 Cys Ala Arg Lys Arg 135 Gln Arg Leu Arg Arg 140     |      |
| cga aaa aga aaa cca gca acc cca aac gaa aca gat atc aag aaa caa             | 842  |
| Arg Lys Arg Lys 145 Pro Ala Thr Pro Asn 150 Glu Thr Asp Ile Lys Lys Gln 155 |      |
| cag caa ctt agc atg cct ccc ttc aaa acg cgc aaa tcc acg gac acc             | 890  |
| Gln Gln Leu Ser Met Pro Pro Phe 165 Lys Thr Arg Lys Ser 170 Thr Asp Thr 170 |      |
| tac agc aca cca gca gca aca acc agc tgt ccg aca gcc acc tac atg             | 938  |
| Tyr Ser 175 Thr Pro Ala Ala Thr 180 Ser Cys Pro Thr 185 Ala Thr Tyr Met 185 |      |
| caa tgt cga gcc agc gac aat gag ttc agt att ccg ata tcg aga cat             | 986  |
| Gln Cys Arg Ala Ser Asp 195 Asn Glu Phe Ser Ile 200 Pro Ile Ser Arg His 205 |      |
| gat aga gta tcc acg gcc aca ttc gcc tgg gtg ttg cat gtg ctg cag             | 1034 |
| Asp Arg Val Ser Thr 210 Ala Thr Phe Ala Trp Val Leu His Val Leu Gln 220     |      |
| gtg ctg ctc gtg tcg ctg caa cag tgg caa ctt cac gtg caa cag cga             | 1082 |
| Val Leu Leu Val Ser Leu Gln Gln Trp 230 Gln Leu His Val Gln Gln Arg 235     |      |
| tcg gtg cta ctg ttc aga agg atc gca gcg agc acc atc gcc ttc att             | 1130 |
| Ser Val Leu Leu Phe Arg Arg Ile 245 Ala Ala Ser Thr Ile Ala Phe Ile 250     |      |
| tcc tat tta ggc agc ttt gca gcg caa ctg aaa aat agc agc agc agc             | 1178 |
| Ser Tyr 255 Leu Gly Ser Phe Ala Ala Gln Leu Lys Asn 265 Ser Ser Ser Ser 265 |      |
| agt agc agc agc aac agc agc aac aac agc agc acg caa ata tta aac             | 1226 |
| Ser Ser Ser Ser Asn 275 Ser Ser Asn Asn Ser Ser 280 Thr Gln Ile Leu Asn 285 |      |
| gga ctt aat aaa cac tca tgg ata ttt tta ttg ata tat ttg aat tta             | 1274 |
| Gly Leu Asn Lys His 290 Ser Trp Ile Phe Leu Leu Ile Tyr Leu Asn Leu 300     |      |
| tct gct aaa gtt tgc cta gca gga tat cat gaa aag aga ctg tta cac             | 1322 |
| Ser Ala Lys Val Cys Leu Ala Gly Tyr 310 His Glu Lys Arg Leu Leu His 315     |      |
| gat ctt ttg gat cct tat aat aca cta gaa cgt ccc gtt ctc aat gaa             | 1370 |
| Asp Leu Leu Asp Pro Tyr Asn Thr 325 Leu Glu Arg Pro Val Leu Asn Glu 330     |      |
| tcg gac ccg tta caa tta agc ttt ggt tta act tta atg caa att atc             | 1418 |
| Ser Asp Pro Leu Gln Leu Ser Phe Gly Leu Thr Leu Met Gln Ile Ile 1418        |      |

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |      |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|------|
| 335 | 340 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |  |  |      |
| gat | gtg | gac | gag | aaa | aat | caa | ttg | cta | gtc | act | aat | gtg | tgg | tta | aaa |  |  |  | 1466 |
| Asp | Val | Asp | Glu | Lys | Asn | Gln | Leu | Leu | Val | Thr | Asn | Val | Trp | Leu | Lys |  |  |  |      |
| 350 |     |     |     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |  |  |  |      |
| ctg | gag | tgg | aac | gac | atg | aat | ctc | cgc | tgg | aac | acc | tcc | gac | tat | ggc |  |  |  | 1514 |
| Leu | Glu | Trp | Asn | Asp | Met | Asn | Leu | Arg | Trp | Asn | Thr | Ser | Asp | Tyr | Gly |  |  |  |      |
|     |     |     |     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |  |  |  |      |
| gga | gtt | aag | gat | ctg | cga | ata | ccg | ccg | cat | cgc | atc | tgg | aag | ccg | gac |  |  |  | 1562 |
| Gly | Val | Lys | Asp | Leu | Arg | Ile | Pro | Pro | His | Arg | Ile | Trp | Lys | Pro | Asp |  |  |  |      |
|     |     |     | 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |  |  |  |      |
| gtg | ctg | atg | tac | aac | agt | gcg | gat | gag | gga | ttt | gac | ggc | acc | tac | cag |  |  |  | 1610 |
| Val | Leu | Met | Tyr | Asn | Ser | Ala | Asp | Glu | Gly | Phe | Asp | Gly | Thr | Tyr | Gln |  |  |  |      |
|     |     | 400 |     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |  |  |  |      |
| acg | aac | gtg | gtg | gtg | cgg | aac | aac | ggc | tcg | tgt | cta | tac | gtt | ccg | ccg |  |  |  | 1658 |
| Thr | Asn | Val | Val | Val | Arg | Asn | Asn | Gly | Ser | Cys | Leu | Tyr | Val | Pro | Pro |  |  |  |      |
|     | 415 |     |     |     |     | 420 |     |     |     |     | 425 |     |     |     |     |  |  |  |      |
| ggg | atc | ttc | aag | tcg | acg | tgc | aag | atc | gac | atc | acg | tgg | ttc | ccc | ttc |  |  |  | 1706 |
| Gly | Ile | Phe | Lys | Ser | Thr | Cys | Lys | Ile | Asp | Ile | Thr | Trp | Phe | Pro | Phe |  |  |  |      |
| 430 |     |     |     |     | 435 |     |     |     | 440 |     |     |     |     |     | 445 |  |  |  |      |
| gat | gac | cag | cgg | tgc | gag | atg | aag | ttc | ggc | agt | tgg | acc | tac | gac | gga |  |  |  | 1754 |
| Asp | Asp | Gln | Arg | Cys | Glu | Met | Lys | Phe | Gly | Ser | Trp | Thr | Tyr | Asp | Gly |  |  |  |      |
|     |     |     |     | 450 |     |     |     |     | 455 |     |     |     |     | 460 |     |  |  |  |      |
| ttc | cag | ctg | gat | tta | caa | tta | caa | gat | gaa | act | ggc | ggt | gat | atc | agc |  |  |  | 1802 |
| Phe | Gln | Leu | Asp | Leu | Gln | Leu | Gln | Asp | Glu | Thr | Gly | Gly | Asp | Ile | Ser |  |  |  |      |
|     |     |     | 465 |     |     |     |     | 470 |     |     |     |     | 475 |     |     |  |  |  |      |
| agt | tac | gtg | ctc | aac | ggc | gag | tgg | gaa | cta | ctg | ggt | gtg | ccc | ggc | aaa |  |  |  | 1850 |
| Ser | Tyr | Val | Leu | Asn | Gly | Glu | Trp | Glu | Leu | Leu | Gly | Val | Pro | Gly | Lys |  |  |  |      |
|     |     | 480 |     |     |     |     | 485 |     |     |     |     | 490 |     |     |     |  |  |  |      |
| cgt | aac | gag | atc | tat | tac | aac | tgc | tgc | ccg | gaa | ccc | tat | ata | gac | atc |  |  |  | 1898 |
| Arg | Asn | Glu | Ile | Tyr | Tyr | Asn | Cys | Cys | Pro | Glu | Pro | Tyr | Ile | Asp | Ile |  |  |  |      |
|     | 495 |     |     |     |     | 500 |     |     |     |     | 505 |     |     |     |     |  |  |  |      |
| acc | ttc | gcc | atc | atc | atc | cgc | cga | cga | aca | ctg | tac | tat | ttc | ttc | aac |  |  |  | 1946 |
| Thr | Phe | Ala | Ile | Ile | Ile | Arg | Arg | Arg | Thr | Leu | Tyr | Tyr | Phe | Phe | Asn |  |  |  |      |
| 510 |     |     |     |     | 515 |     |     |     |     | 520 |     |     |     |     | 525 |  |  |  |      |
| ctg | atc | ata | cct | tgt | gta | ctg | att | gcc | tcc | atg | gcc | ttg | ctc | gga | ttc |  |  |  | 1994 |
| Leu | Ile | Ile | Pro | Cys | Val | Leu | Ile | Ala | Ser | Met | Ala | Leu | Leu | Gly | Phe |  |  |  |      |
|     |     |     |     | 530 |     |     |     | 535 |     |     |     |     |     | 540 |     |  |  |  |      |
| acc | ctg | ccg | cca | gat | tcg | ggt | gaa | aaa | tta | tcg | ctg | ggt | gtt | acc | atc |  |  |  | 2042 |
| Thr | Leu | Pro | Pro | Asp | Ser | Gly | Glu | Lys | Leu | Ser | Leu | Gly | Val | Thr | Ile |  |  |  |      |
|     |     |     | 545 |     |     |     |     | 550 |     |     |     |     | 555 |     |     |  |  |  |      |
| ttg | ctc | tcg | ctg | acc | gtg | ttt | ctg | aat | atg | ggt | gcc | gag | aca | atg | ccg |  |  |  | 2090 |
| Leu | Leu | Ser | Leu | Thr | Val | Phe | Leu | Asn | Met | Val | Ala | Glu | Thr | Met | Pro |  |  |  |      |
|     |     | 560 |     |     |     |     | 565 |     |     |     | 570 |     |     |     |     |  |  |  |      |
| gct | act | tcc | gat | gcg | gtg | cca | ttg | tgg | ata | cgc | atc | gtg | ttt | ttg | tgc |  |  |  | 2138 |
| Ala | Thr | Ser | Asp | Ala | Val | Pro | Leu | Trp | Ile | Arg | Ile | Val | Phe | Leu | Cys |  |  |  |      |
|     | 575 |     |     |     |     | 580 |     |     |     |     | 585 |     |     |     |     |  |  |  |      |
| tgg | ctg | cca | tgg | ata | ttg | cga | atg | agt | cgc | cca | gga | cga | ccg | ctg | atc |  |  |  | 2186 |

## Mo5176new.txt

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|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------|
| Trp<br>590 | Leu        | Pro        | Trp        | Ile        | Leu<br>595 | Arg        | Met        | Ser        | Arg        | Pro        | Gly<br>600 | Arg        | Pro        | Leu        | Ile<br>605 |      |
| cta        | gag        | ttc        | ccg        | acc        | acg        | ccc        | tgt        | tcg        | gac        | aca        | tcc        | tcc        | gag        | cgg        | aag        | 2234 |
| Leu        | Glu        | Phe        | Pro        | Thr<br>610 | Thr        | Pro        | Cys        | Ser        | Asp<br>615 | Thr        | Ser        | Ser        | Glu        | Arg<br>620 | Lys        |      |
| cac        | cag        | ata        | ctc        | tcc        | gac        | gtt        | gag        | ctg        | aaa        | gag        | cgc        | tcg        | tcg        | aaa        | tcg        | 2282 |
| His        | Gln        | Ile        | Leu<br>625 | Ser        | Asp        | Val        | Glu        | Leu<br>630 | Lys        | Glu        | Arg        | Ser        | Ser        | Lys        | Ser        |      |
| ctg        | ctg        | gcc        | aac        | gta        | cta        | gac        | atc        | gat        | gat        | gac        | ttc        | cgg        | cac        | aat        | tgt        | 2330 |
| Leu        | Leu        | Ala<br>640 | Asn        | Val        | Leu        | Asp        | Ile<br>645 | Asp        | Asp        | Asp        | Phe        | Arg<br>650 | His        | Asn        | Cys        |      |
| cgc        | ccc        | atg        | acg        | ccc        | ggc        | gga        | aca        | ctg        | cca        | cac        | aac        | ccg        | gct        | ttc        | tat        | 2378 |
| Arg        | Pro<br>655 | Met        | Thr        | Pro        | Gly<br>660 | Gly        | Thr        | Leu        | Pro        | His        | Asn<br>665 | Pro        | Ala        | Phe        | Tyr        |      |
| cgc        | acg        | gtt        | tat        | gga        | caa        | ggc        | gac        | gat        | ggc        | agc        | att        | ggg        | cca        | att        | ggc        | 2426 |
| Arg<br>670 | Thr        | Val        | Tyr        | Gly<br>675 | Gln        | Gly        | Asp        | Asp        | Gly        | Ser<br>680 | Ile        | Gly        | Pro        | Ile        | Gly<br>685 |      |
| agc        | acc        | cga        | atg        | ccg        | gat        | gcg        | gtc        | acc        | cat        | cat        | acg        | tgc        | atc        | aaa        | tca        | 2474 |
| Ser        | Thr        | Arg        | Met        | Pro<br>690 | Asp        | Ala        | Val        | Thr        | His<br>695 | His        | Thr        | Cys        | Ile        | Lys<br>700 | Ser        |      |
| tca        | act        | gaa        | tat        | gaa        | tta        | ggt        | tta        | atc        | tta        | aag        | gaa        | att        | cgc        | ttt        | ata        | 2522 |
| Ser        | Thr        | Glu<br>705 | Tyr        | Glu        | Leu        | Gly        | Leu        | Ile<br>710 | Leu        | Lys        | Glu        | Ile        | Arg<br>715 | Phe        | Ile        |      |
| act        | gat        | cag        | cta        | cgt        | aaa        | gat        | gac        | gag        | tgc        | aat        | gac        | att        | gcc        | aat        | gat        | 2570 |
| Thr        | Asp        | Gln<br>720 | Leu        | Arg        | Lys        | Asp        | Asp<br>725 | Glu        | Cys        | Asn        | Asp        | Ile<br>730 | Ala        | Asn        | Asp        |      |
| tgg        | aaa        | ttt        | gca        | gct        | atg        | gtc        | gtt        | gac        | aga        | ctg        | tgc        | ctt        | atc        | ata        | ttc        | 2618 |
| Trp        | Lys<br>735 | Phe        | Ala        | Ala        | Met        | Val<br>740 | Val        | Asp        | Arg        | Leu        | Cys<br>745 | Leu        | Ile        | Ile        | Phe        |      |
| aca        | atg        | ttc        | gca        | ata        | tta        | gcc        | aca        | ata        | gct        | gta        | cta        | cta        | tcg        | gca        | cca        | 2666 |
| Thr        | Met        | Phe        | Ala        | Ile        | Leu<br>755 | Ala        | Thr        | Ile        | Ala        | Val<br>760 | Leu        | Leu        | Ser        | Ala        | Pro<br>765 |      |
| cat        | att        | att        | gtc        | tcg        | tagccat    | atg        | ggcgaggtg  | gtg        | ttattgttat | tggttttatt |            |            |            |            |            | 2721 |
| His        | Ile        | Ile        | Val        | Ser<br>770 |            |            |            |            |            |            |            |            |            |            |            |      |
| ataaaatcaa | ttt        | gttaatt    | attaaattaa | taacgaaact | ctttaagtaa | attaaaacta |            |            |            |            |            |            |            |            |            | 2781 |
| aaaagacact | aaaaa      | agcac      | aaaaaaatag | gaaaatacat | gataaaaccc | atgaactaaa |            |            |            |            |            |            |            |            |            | 2841 |
| taatacatcc | aagaaaaacc | aaaacaaaaa | aaaaaaaaaa | aaaaa      |            |            |            |            |            |            |            |            |            |            |            | 2886 |

&lt;210&gt; 2

&lt;211&gt; 770

&lt;212&gt; PRT

&lt;213&gt; Drosophila melanogaster

&lt;400&gt; 2

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Asn | Ala | Gln | Leu | Lys | Leu | Thr | Glu | Val | Asp | Asp | Asp | Glu | Leu |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

Trp Leu Ala Val Arg Leu Ala His Cys Ser Ser Asn Phe Ser Ser Ser  
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 Ser Ser Thr Arg Thr Thr Ser Ser Asn Gln Arg His Asn Gln Gln Leu  
 35 40 45  
 Thr Thr Leu Gln Pro Arg Ser Leu Ser Thr Lys His His Ser Asn Ile  
 50 55 60  
 Ala Ser Glu Gln His Asn Ser Gln Gln Gln Glu Pro Ala Ser Lys Asp  
 65 70 75 80  
 Glu Asp Val Ala Asn His Gly Arg Ser Asn Asp Gln Gln Thr His Leu  
 85 90 95  
 Gln Gln Leu Asp Ser Ser Asn Met Leu Ser Pro Lys Thr Ala Ala Ala  
 100 105 110  
 Ala Thr Ala Ala Gly Asp Glu Ala Thr Thr Gln Gln Pro Thr Asn Ile  
 115 120 125  
 Arg Leu Cys Ala Arg Lys Arg Gln Arg Leu Arg Arg Arg Arg Lys Arg  
 130 135 140  
 Lys Pro Ala Thr Pro Asn Glu Thr Asp Ile Lys Lys Gln Gln Gln Leu  
 145 150 155 160  
 Ser Met Pro Pro Phe Lys Thr Arg Lys Ser Thr Asp Thr Tyr Ser Thr  
 165 170 175  
 Pro Ala Ala Thr Thr Ser Cys Pro Thr Ala Thr Tyr Met Gln Cys Arg  
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 Ala Ser Asp Asn Glu Phe Ser Ile Pro Ile Ser Arg His Asp Arg Val  
 195 200 205  
 Ser Thr Ala Thr Phe Ala Trp Val Leu His Val Leu Gln Val Leu Leu  
 210 215 220  
 Val Ser Leu Gln Gln Trp Gln Leu His Val Gln Gln Arg Ser Val Leu  
 225 230 235 240  
 Leu Phe Arg Arg Ile Ala Ala Ser Thr Ile Ala Phe Ile Ser Tyr Leu  
 245 250 255  
 Gly Ser Phe Ala Ala Gln Leu Lys Asn Ser Ser Ser Ser Ser Ser Ser  
 260 265 270  
 Ser Asn Ser Ser Asn Asn Ser Ser Thr Gln Ile Leu Asn Gly Leu Asn  
 275 280 285  
 Lys His Ser Trp Ile Phe Leu Leu Ile Tyr Leu Asn Leu Ser Ala Lys  
 290 295 300  
 Val Cys Leu Ala Gly Tyr His Glu Lys Arg Leu Leu His Asp Leu Leu  
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 Asp Pro Tyr Asn Thr Leu Glu Arg Pro Val Leu Asn Glu Ser Asp Pro  
 325 330 335  
 Leu Gln Leu Ser Phe Gly Leu Thr Leu Met Gln Ile Ile Asp Val Asp  
 340 345 350

Glu Lys Asn Gln Leu Leu Val Thr Asn Val Trp Leu Lys Leu Glu Trp  
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 Asn Asp Met Asn Leu Arg Trp Asn Thr Ser Asp Tyr Gly Gly Val Lys  
 370 375 380  
 Asp Leu Arg Ile Pro Pro His Arg Ile Trp Lys Pro Asp Val Leu Met  
 385 390 395 400  
 Tyr Asn Ser Ala Asp Glu Gly Phe Asp Gly Thr Tyr Gln Thr Asn Val  
 405 410 415  
 Val Val Arg Asn Asn Gly Ser Cys Leu Tyr Val Pro Pro Gly Ile Phe  
 420 425 430  
 Lys Ser Thr Cys Lys Ile Asp Ile Thr Trp Phe Pro Phe Asp Asp Gln  
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 Arg Cys Glu Met Lys Phe Gly Ser Trp Thr Tyr Asp Gly Phe Gln Leu  
 450 455 460  
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 485 490 495  
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 500 505 510  
 Ile Ile Ile Arg Arg Arg Thr Leu Tyr Tyr Phe Phe Asn Leu Ile Ile  
 515 520 525  
 Pro Cys Val Leu Ile Ala Ser Met Ala Leu Leu Gly Phe Thr Leu Pro  
 530 535 540  
 Pro Asp Ser Gly Glu Lys Leu Ser Leu Gly Val Thr Ile Leu Leu Ser  
 545 550 555 560  
 Leu Thr Val Phe Leu Asn Met Val Ala Glu Thr Met Pro Ala Thr Ser  
 565 570 575  
 Asp Ala Val Pro Leu Trp Ile Arg Ile Val Phe Leu Cys Trp Leu Pro  
 580 585 590  
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 595 600 605  
 Pro Thr Thr Pro Cys Ser Asp Thr Ser Ser Glu Arg Lys His Gln Ile  
 610 615 620  
 Leu Ser Asp Val Glu Leu Lys Glu Arg Ser Ser Lys Ser Leu Leu Ala  
 625 630 635 640  
 Asn Val Leu Asp Ile Asp Asp Asp Phe Arg His Asn Cys Arg Pro Met  
 645 650 655  
 Thr Pro Gly Gly Thr Leu Pro His Asn Pro Ala Phe Tyr Arg Thr Val  
 660 665 670  
 Tyr Gly Gln Gly Asp Asp Gly Ser Ile Gly Pro Ile Gly Ser Thr Arg  
 675 680 685

## Mo5176new.txt

Met Pro Asp Ala Val Thr His His Thr Cys Ile Lys Ser Ser Thr Glu  
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 Tyr Glu Leu Gly Leu Ile Leu Lys Glu Ile Arg Phe Ile Thr Asp Gln  
 705 710 715 720  
 Leu Arg Lys Asp Asp Glu Cys Asn Asp Ile Ala Asn Asp Trp Lys Phe  
 725 730 735  
 Ala Ala Met Val Val Asp Arg Leu Cys Leu Ile Ile Phe Thr Met Phe  
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 gcgtggccgt cggcgagcgg tcgtgaacaa gttgcataca tatgaaaacc gtaaaaagat 180  
 tgaatttttaa gccgatcgtg ttcgatagat cctaatagag aagcgggagt gcggcgtttg 240  
 gtaggcgggg gtcgagtcgc gcggtcgggg gaaatggcgc ggcgcggggc ggcggcggcg 300  
 gcggcgcgcg gcgcggcggc gtcgcggcgc tgac atg ggc ggg cgg gcg cgc cgc 355  
 Met Gly Gly Arg Ala Arg Arg  
 1 5  
 tcg cac ttg gcg gcg ccc gcg ggc ctg ctg ctg ctg ctg tgc ctg ctc 403  
 Ser His Leu Ala Ala Pro Ala Gly Leu Leu Leu Leu Leu Cys Leu Leu  
 10 15 20  
 tgg ccg agg ggg gca cgc tgc ggg tac cac gag aag cgg cta ctg cac 451  
 Trp Pro Arg Gly Ala Arg Cys Gly Tyr His Glu Lys Arg Leu Leu His  
 25 30 35  
 cac cta ttg gac cac tac aac gta ctg gag agg ccc gtc gtc aac gag 499  
 His Leu Leu Asp His Tyr Asn Val Leu Glu Arg Pro Val Val Asn Glu  
 40 45 50 55  
 agc gac ccg ctg cag ctc tcc ttc ggc ctc acg ctc atg cag atc atc 547  
 Ser Asp Pro Leu Gln Leu Ser Phe Gly Leu Thr Leu Met Gln Ile Ile  
 60 65 70  
 gac gtg gac gag aag aac cag ctt tta ata aca aac atc tgg cta aaa 595  
 Asp Val Asp Glu Lys Asn Gln Leu Leu Ile Thr Asn Ile Trp Leu Lys  
 75 80 85

## Mo5176new.txt

|   |      |
|---|------|
| cta gag tgg aat gat atg aac ttg agg tgg aac act tca gat ttc ggc | 643  |
| Leu Glu Trp Asn Asp Met Asn Leu Arg Trp Asn Thr Ser Asp Phe Gly |      |
| 90 95 100   |      |
| ggg gtc aaa gat tta aga gtg cca ccc cac aga cta tgg aaa cca gac | 691  |
| Gly Val Lys Asp Leu Arg Val Pro Pro His Arg Leu Trp Lys Pro Asp |      |
| 105 110 115   |      |
| gtc ctt atg tac aac agc gcg gac gaa ggg ttc gac agc acg tat cca | 739  |
| Val Leu Met Tyr Asn Ser Ala Asp Glu Gly Phe Asp Ser Thr Tyr Pro |      |
| 120 125 130 135   |      |
| acg aac gtg gtg gtg cgg aac aac ggc tcg tgt ctg tac gtg ccg ccc | 787  |
| Thr Asn Val Val Val Arg Asn Asn Gly Ser Cys Leu Tyr Val Pro Pro |      |
| 140 145 150   |      |
| ggc atc ttc aag agc acc tgc aag atc gac atc acc tgg ttc ccc ttc | 835  |
| Gly Ile Phe Lys Ser Thr Cys Lys Ile Asp Ile Thr Trp Phe Pro Phe |      |
| 155 160 165   |      |
| gac gac caa cga tgc gag atg aag ttt ggc agc tgg act tat gat ggt | 883  |
| Asp Asp Gln Arg Cys Glu Met Lys Phe Gly Ser Trp Thr Tyr Asp Gly |      |
| 170 175 180   |      |
| tat cag ttg gat cta caa cta cag gat gaa ggg ggc gga gat ata agc | 931  |
| Tyr Gln Leu Asp Leu Gln Leu Gln Asp Glu Gly Gly Gly Asp Ile Ser |      |
| 185 190 195   |      |
| agt ttt gtc acg aat ggc gaa tgg gag tta ata gga gtc ccc ggc aag | 979  |
| Ser Phe Val Thr Asn Gly Glu Trp Glu Leu Ile Gly Val Pro Gly Lys |      |
| 200 205 210 215   |      |
| cgc aac gag atc tac tac aac tgt tgt ccg gag cca tac atc gac atc | 1027 |
| Arg Asn Glu Ile Tyr Tyr Asn Cys Cys Pro Glu Pro Tyr Ile Asp Ile |      |
| 220 225 230   |      |
| acg ttt gcg gtg gtg atc cgg agg aaa acg ctc tac tac ttc ttc aat | 1075 |
| Thr Phe Ala Val Val Ile Arg Arg Lys Thr Leu Tyr Tyr Phe Phe Asn |      |
| 235 240 245   |      |
| ctg atc gtg ccc tgc gtg ctc atc gcc tcc atg gct cta ttg ggg ttc | 1123 |
| Leu Ile Val Pro Cys Val Leu Ile Ala Ser Met Ala Leu Leu Gly Phe |      |
| 250 255 260   |      |
| acc ttg cct cca gac tcc gga gaa aag ttg tct tta ggt gtg acg ata | 1171 |
| Thr Leu Pro Pro Asp Ser Gly Glu Lys Leu Ser Leu Gly Val Thr Ile |      |
| 265 270 275   |      |
| tta ctg tcg ttg acg gtg ttc ctc aac atg gtg gcg gag acg atg cca | 1219 |
| Leu Leu Ser Leu Thr Val Phe Leu Asn Met Val Ala Glu Thr Met Pro |      |
| 280 285 290 295   |      |
| gcg acg tcg gac gcc gtg ccc ttg ctc ggc acc tac ttc aac tgc atc | 1267 |
| Ala Thr Ser Asp Ala Val Pro Leu Leu Gly Thr Tyr Phe Asn Cys Ile |      |
| 300 305 310   |      |
| atg ttc atg gtg gct tcc tcc gtc gtc tcc acc ata ctg atc ctc aac | 1315 |
| Met Phe Met Val Ala Ser Ser Val Val Ser Thr Ile Leu Ile Leu Asn |      |
| 315 320 325   |      |
| tac cac cac cgg cac gca gac act cac gaa atg agt gat tgg att cgt | 1363 |
| Tyr His His Arg His Ala Asp Thr His Glu Met Ser Asp Trp Ile Arg |      |



| 330   | 335 | 340 |      |
|---|-----|-----|------|
| tgc gtc ttc ctt tat tgg ctg ccg tgg gtg ctg cgc atg tca cgg ccc<br>Cys Val Phe Leu Tyr Trp Leu Pro Trp Val Leu Arg Met Ser Arg Pro<br>345 350 355     |     |     | 1411 |
| ggc tcg gcg acg acg ccg ccg ccg gcg cgc gta cct ccg ccg ccg gac<br>Gly Ser Ala Thr Thr Pro Pro Pro Ala Arg Val Pro Pro Pro Pro Asp<br>360 365 370 375 |     |     | 1459 |
| ctg gag ctg cgc gag cgc tcc tcc aag tcg ctc cta gcg aac gtg ctc<br>Leu Glu Leu Arg Glu Arg Ser Ser Lys Ser Leu Leu Ala Asn Val Leu<br>380 385 390     |     |     | 1507 |
| gac atc gat gac gac ttc cgc cac ccg caa gcg cag cag ccg caa tgc<br>Asp Ile Asp Asp Asp Phe Arg His Pro Gln Ala Gln Gln Pro Gln Cys<br>395 400 405     |     |     | 1555 |
| tgc cga tac tac agg ggg ggt gag gag aat ggc gcg ggg ttg gcg gcg<br>Cys Arg Tyr Tyr Arg Gly Gly Glu Glu Asn Gly Ala Gly Leu Ala Ala<br>410 415 420     |     |     | 1603 |
| cac agt tgc ttc ggt gtc gac tac gag ctc tcc ctc att ctg aag gag<br>His Ser Cys Phe Gly Val Asp Tyr Glu Leu Ser Leu Ile Leu Lys Glu<br>425 430 435     |     |     | 1651 |
| att aga gtc atc aca gat cag atg cgc aag gac gac gaa gat gcg gac<br>Ile Arg Val Ile Thr Asp Gln Met Arg Lys Asp Asp Glu Asp Ala Asp<br>440 445 450 455 |     |     | 1699 |
| att tcg cgc gac tgg aag ttc gcc gcc atg gtc gtg gac aga ctg tgc<br>Ile Ser Arg Asp Trp Lys Phe Ala Ala Met Val Val Asp Arg Leu Cys<br>460 465 470     |     |     | 1747 |
| ctt att atc ttt acc ctg ttc aca atc atc gcc acg cta gcc gtg ctg<br>Leu Ile Ile Phe Thr Leu Phe Thr Ile Ile Ala Thr Leu Ala Val Leu<br>475 480 485     |     |     | 1795 |
| ctg tcc gcg cca cac atc atg gtg tcg tagcgacccg cccgcttgcg<br>Leu Ser Ala Pro His Ile Met Val Ser<br>490 495   |     |     | 1842 |
| gatacgc atg cgaaaagtgc tgtgataccg cgaatatttg ttaagttgtg atgagcgaag  |     |     | 1902 |
| tggcgcggac ggtgacgccg cggcgtcgga gttgccgccg cctgcctcgc cgcccgcgcc   |     |     | 1962 |
| cccctgtaga cataagttac cgctgactgc caaccctgta cgttcaacaa ataactgccc   |     |     | 2022 |
| atccgactaa cgtcttttat ccccttgaaa aattcagcga ttgtgtaccc ctttcttcca   |     |     | 2082 |
| agaatacaat gacaaatggt cgtcacgctc agtggaaatca atcccgtact cttcgccccga   |     |     | 2142 |
| tatttccctt agggatgtgc acgagtttga atgagcgggt ccgtatcaga cgttccgtcc   |     |     | 2202 |
| ccggaacggt cgtcccctgc gataaagtgg cagtacgtgc tatacaggca cttaaggccg   |     |     | 2262 |
| ccacgccacg gcgccgcggt gcgctcgggc cgcgaaccgc cgaccctcac cgctgcaagt   |     |     | 2322 |
| ggccacccac tagacaagac tgcggcagaa aatatttgca caaaaacgtc ttccttctta   |     |     | 2382 |
| ccgatgaacg acctgattcg catttaaaat taaactttgt tagaacttct tcgattcttg   |     |     | 2442 |
| aaatctattg tacagtttag agtttgggcg gtgaaacaat ggccctttgt ttccttcttg   |     |     | 2502 |

Mo5176new.txt

ttcgattcca tgaatcgtgg ttataatccc tagttttatt ttcggatata tttgtgtcag 2562  
tagctagtat agaactttac aaacaatggt gattcaattg gtacagggtg tgatatgcct 2622  
cgttgtgaac ggggccgata ttgttataaa tggtaaaata cccatggcta tagcttaata 2682  
aatcgttcgt taaaagttgt agttaaaca atattatattt aataaagtca tatctgggtc 2742  
ttccggaacg actttttaca ataattaaat tacatatata tatcacgttt gtacttcttt 2802  
ccatacagtt acagtaattc gtatgctgaa aataatatta gcttgtaaaa ttttcttctt 2862  
cgaaaattta ttcaaacaga tgcgaccatc gtttcaaaca ttacatgta atatagaact 2922  
cattttataa gatatacaac attttataag tacaagaagt tgtaacatga accgggtttt 2982  
cgttacatag aggggtataac acaaagggtc ctacatattg acagatgcga agcacgatca 3042  
gttgataagc acaggtacac tatatcctga catccgacag tcctgccgct cgtctgccac 3102  
actcggaac attcgacagt tcagtttact gtcgcccat catcgattgt taagtttgtt 3162  
gttctaactc atcgattca tttcattcaa aaacattgta aacctctcaa ggggaaaacg 3222  
tgttgtaaac agtgagagtg cgcgggtaca accgacacgc gaatgtaccc tcgcaaggct 3282  
cctgtaatgt tttcctcttc cgaggtgttg ctgagagtaa tcttagacgg tccgatggaa 3342  
gttgcgggacc ggatatgatt acaagtcaat gtttttaagt catccgttta tttattgtta 3402  
tatcttctta ccattcgcta gaggttgtgt gacgaccgg acggtgggcg ccgcaaccgg 3462  
cacacgcggg gttccatctt tgtattagat ggaagttgtg cggcatctct ccgtcggcaa 3522  
tgggacaacc cgttgtcccc aacatttggt caattgtag ggtaactct gaattgcact 3582  
ttgtttatta aatataaacg aatgaaaca aaaaaaaaaa aaaaaactcg agagtacttc 3642  
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<211> 496

<212> PRT

<213> *Heliothis virescens*

<400> 4

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Leu Leu Leu Leu Cys Leu Leu Trp Pro Arg Gly Ala Arg Cys Gly Tyr  
20 25 30  
His Glu Lys Arg Leu Leu His His Leu Leu Asp His Tyr Asn Val Leu  
35 40 45  
Glu Arg Pro Val Val Asn Glu Ser Asp Pro Leu Gln Leu Ser Phe Gly  
50 55 60  
Leu Thr Leu Met Gln Ile Ile Asp Val Asp Glu Lys Asn Gln Leu Leu  
65 70 75 80

## Mo5176new.txt

Ile Thr Asn Ile Trp Leu Lys Leu Glu Trp Asn Asp Met Asn Leu Arg  
 85 90 95  
 Trp Asn Thr Ser Asp Phe Gly Gly Val Lys Asp Leu Arg Val Pro Pro  
 100 105 110  
 His Arg Leu Trp Lys Pro Asp Val Leu Met Tyr Asn Ser Ala Asp Glu  
 115 120 125  
 Gly Phe Asp Ser Thr Tyr Pro Thr Asn Val Val Val Arg Asn Asn Gly  
 130 135 140  
 Ser Cys Leu Tyr Val Pro Pro Gly Ile Phe Lys Ser Thr Cys Lys Ile  
 145 150 155 160  
 Asp Ile Thr Trp Phe Pro Phe Asp Asp Gln Arg Cys Glu Met Lys Phe  
 165 170 175  
 Gly Ser Trp Thr Tyr Asp Gly Tyr Gln Leu Asp Leu Gln Leu Gln Asp  
 180 185 190  
 Glu Gly Gly Gly Asp Ile Ser Ser Phe Val Thr Asn Gly Glu Trp Glu  
 195 200 205  
 Leu Ile Gly Val Pro Gly Lys Arg Asn Glu Ile Tyr Tyr Asn Cys Cys  
 210 215 220  
 Pro Glu Pro Tyr Ile Asp Ile Thr Phe Ala Val Val Ile Arg Arg Lys  
 225 230 235 240  
 Thr Leu Tyr Tyr Phe Phe Asn Leu Ile Val Pro Cys Val Leu Ile Ala  
 245 250 255  
 Ser Met Ala Leu Leu Gly Phe Thr Leu Pro Pro Asp Ser Gly Glu Lys  
 260 265 270  
 Leu Ser Leu Gly Val Thr Ile Leu Leu Ser Leu Thr Val Phe Leu Asn  
 275 280 285  
 Met Val Ala Glu Thr Met Pro Ala Thr Ser Asp Ala Val Pro Leu Leu  
 290 295 300  
 Gly Thr Tyr Phe Asn Cys Ile Met Phe Met Val Ala Ser Ser Val Val  
 305 310 315 320  
 Ser Thr Ile Leu Ile Leu Asn Tyr His His Arg His Ala Asp Thr His  
 325 330 335  
 Glu Met Ser Asp Trp Ile Arg Cys Val Phe Leu Tyr Trp Leu Pro Trp  
 340 345 350  
 Val Leu Arg Met Ser Arg Pro Gly Ser Ala Thr Thr Pro Pro Pro Ala  
 355 360 365  
 Arg Val Pro Pro Pro Pro Asp Leu Glu Leu Arg Glu Arg Ser Ser Lys  
 370 375 380  
 Ser Leu Leu Ala Asn Val Leu Asp Ile Asp Asp Asp Phe Arg His Pro  
 385 390 395 400  
 Gln Ala Gln Gln Pro Gln Cys Cys Arg Tyr Tyr Arg Gly Gly Glu Glu  
 405 410 415

Asn Gly Ala Gly Leu Ala Ala His Ser Cys Phe Gly Val Asp Tyr Glu  
 420 425 430  
 Leu Ser Leu Ile Leu Lys Glu Ile Arg Val Ile Thr Asp Gln Met Arg  
 435 440 445  
 Lys Asp Asp Glu Asp Ala Asp Ile Ser Arg Asp Trp Lys Phe Ala Ala  
 450 455 460  
 Met Val Val Asp Arg Leu Cys Leu Ile Ile Phe Thr Leu Phe Thr Ile  
 465 470 475 480  
 Ile Ala Thr Leu Ala Val Leu Leu Ser Ala Pro His Ile Met Val Ser  
 485 490 495

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 <212> DNA  
 <213> *Heliothis virescens*

<220>  
 <221> CDS  
 <222> (95)..(1597)

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 gtgcgcgggt gtggtatgcc cgcgcgtcgc cgct atg gcc cct atg ttg gcg gcc 115  
 Met Ala Pro Met Leu Ala Ala  
 1 5  
 ttg gcg ctg ctg gct ttg ctg ccc gta tcg gag caa ggt cct cac gag 163  
 Leu Ala Leu Leu Ala Leu Leu Pro Val Ser Glu Gln Gly Pro His Glu  
 10 15 20  
 aag aga ctc ctg aac gcg ttg ctg gcg aac tac aac acc ctg gag cga 211  
 Lys Arg Leu Leu Asn Ala Leu Leu Ala Asn Tyr Asn Thr Leu Glu Arg  
 25 30 35  
 ccg gtg gcc aac gag agc gaa ccg cta gag gtc agg ttc ggc ttg acc 259  
 Pro Val Ala Asn Glu Ser Glu Pro Leu Glu Val Arg Phe Gly Leu Thr  
 40 45 50 55  
 ttg cag caa atc att gac gtg gac gag aag aat caa cta ctt ata acc 307  
 Leu Gln Gln Ile Ile Asp Val Asp Glu Lys Asn Gln Leu Leu Ile Thr  
 60 65 70  
 aat ata tgg ctg tcg ttg gag tgg aat gac tac aac ctg agg tgg aac 355  
 Asn Ile Trp Leu Ser Leu Glu Trp Asn Asp Tyr Asn Leu Arg Trp Asn  
 75 80 85  
 gac agc gag tat ggc ggg gtc aag gac ctc agg atc acg ccc aac aag 403  
 Asp Ser Glu Tyr Gly Gly Val Lys Asp Leu Arg Ile Thr Pro Asn Lys  
 90 95 100  
 ttg tgg aag ccg gac gtc ctt atg tat aat agt gct gac gag ggt ttt 451  
 Leu Trp Lys Pro Asp Val Leu Met Tyr Asn Ser Ala Asp Glu Gly Phe  
 105 110 115  
 gac ggg acc tac cag acc aac gtg gtg gtc aga agc ggc ggc agt tgc 499  
 Asp Gly Thr Tyr Gln Thr Asn Val Val Val Arg Ser Gly Gly Ser Cys

| 120  | 125 | 130 | 135 |      |
|--|-----|-----|-----|------|
| ctg tac gtg cca cct ggc ata ttc aag agc aca tgc aag atg gac atc<br>Leu Tyr Val Pro Pro Gly Ile Phe Lys Ser Thr Cys Lys Met Asp Ile | 140 | 145 | 150 | 547  |
| gcg tgg ttt ccc ttc gac gac caa cac tgt gat atg aag ttc ggt agc<br>Ala Trp Phe Pro Phe Asp Asp Gln His Cys Asp Met Lys Phe Gly Ser | 155 | 160 | 165 | 595  |
| tgg aca tat gac ggc aat cag ttg gat ctg gtg cta aaa gat gag gca<br>Trp Thr Tyr Asp Gly Asn Gln Leu Asp Leu Val Leu Lys Asp Glu Ala | 170 | 175 | 180 | 643  |
| ggc ggc gat cta tcg gac ttc ata aca aat ggg gag tgg tat cta ata<br>Gly Gly Asp Leu Ser Asp Phe Ile Thr Asn Gly Glu Trp Tyr Leu Ile | 185 | 190 | 195 | 691  |
| gga atg cca ggc aaa aag aac aca ata aca tac gcg tgc tgc ccc gag<br>Gly Met Pro Gly Lys Lys Asn Thr Ile Thr Tyr Ala Cys Cys Pro Glu | 200 | 205 | 210 | 739  |
| ccc tac gtg gac gtc acc ttc acc atc atg ata aga aga cga acc ttg<br>Pro Tyr Val Asp Val Thr Phe Thr Ile Met Ile Arg Arg Arg Thr Leu | 220 | 225 | 230 | 787  |
| tac tac ttc ttc aac ctg atc gtc ccg tgc gtg ctg atc tca tcg atg<br>Tyr Tyr Phe Phe Asn Leu Ile Val Pro Cys Val Leu Ile Ser Ser Met | 235 | 240 | 245 | 835  |
| gca ctc ctc ggc ttc aca ctg cca cca gac tcc gga gag aaa ctc aca<br>Ala Leu Leu Gly Phe Thr Leu Pro Pro Asp Ser Gly Glu Lys Leu Thr | 250 | 255 | 260 | 883  |
| ctt gga gtc act att ctt cta tcg ctg acg gtg ttc ctc aac ctg gta<br>Leu Gly Val Thr Ile Leu Leu Ser Leu Thr Val Phe Leu Asn Leu Val | 265 | 270 | 275 | 931  |
| gcc gag acc ctg cca cag gtc tcc gac gct atc ccc ctg tta ggg acg<br>Ala Glu Thr Leu Pro Gln Val Ser Asp Ala Ile Pro Leu Leu Gly Thr | 280 | 285 | 290 | 979  |
| tac ttc aat tgc atc atg ttc atg gta gcg tcg tct gtg gta ctg act<br>Tyr Phe Asn Cys Ile Met Phe Met Val Ala Ser Ser Val Val Leu Thr | 300 | 305 | 310 | 1027 |
| gtg gtg gta ctc aat tac cac cat cga aca gct gat ata cat gaa atg<br>Val Val Val Leu Asn Tyr His His Arg Thr Ala Asp Ile His Glu Met | 315 | 320 | 325 | 1075 |
| cca cag tgg ata aaa tca gta ttc cta caa tgg ttg cca tgg ata ctg<br>Pro Gln Trp Ile Lys Ser Val Phe Leu Gln Trp Leu Pro Trp Ile Leu | 330 | 335 | 340 | 1123 |
| cga atg tcg agg cca ggg aag aag atc acc agg aag act ata atg atg<br>Arg Met Ser Arg Pro Gly Lys Lys Ile Thr Arg Lys Thr Ile Met Met | 345 | 350 | 355 | 1171 |
| aac acg agg atg agg gag ctg gaa ctg aag gag agg tcg tcg aag tcc<br>Asn Thr Arg Met Arg Glu Leu Glu Leu Lys Glu Arg Ser Ser Lys Ser | 360 | 365 | 370 | 1219 |
| ttg ctg gcg aat gtt cta gat att gat gat gac ttc aga cac ggc cct  |     |     |     | 1267 |

## Mo5176new.txt

Leu Leu Ala Asn Val Leu Asp Ile Asp Asp Asp Phe Arg His Gly Pro  
 380 385 390  
 ccg cct cct aac agt act gcc tcg acc ggg aat ttg gga cct ggg tgc 1315  
 Pro Pro Pro Asn Ser Thr Ala Ser Thr Gly Asn Leu Gly Pro Gly Cys  
 395 400 405  
 tca ata ttc cgc acg gat ttc cgt cgg tcg ttc gtc cgt ccg tcc acg 1363  
 Ser Ile Phe Arg Thr Asp Phe Arg Arg Ser Phe Val Arg Pro Ser Thr  
 410 415 420  
 atg gaa gac gtg ggc ggc ggg ctg ggt agc cac cat cgc gag ctg cac 1411  
 Met Glu Asp Val Gly Gly Gly Leu Gly Ser His His Arg Glu Leu His  
 425 430 435  
 ctc ata ctg aga gag ctg cag ttc atc acg gcc agg atg aag aag gct 1459  
 Leu Ile Leu Arg Glu Leu Gln Phe Ile Thr Ala Arg Met Lys Lys Ala  
 440 445 450 455  
 gat gag gaa gcc gag ctg atc agc gac tgg aag ttt gct gcg atg gtt 1507  
 Asp Glu Glu Ala Glu Leu Ile Ser Asp Trp Lys Phe Ala Ala Met Val  
 460 465 470  
 gtt gat agg ttt tgc ctg ttc gtg ttc aca ctt ttc aca atc atc gcg 1555  
 Val Asp Arg Phe Cys Leu Phe Val Phe Thr Leu Phe Thr Ile Ile Ala  
 475 480 485  
 aca gta gct gtc ctg tta tcg gca ccg cat atc atc gtg caa 1597  
 Thr Val Ala Val Leu Leu Ser Ala Pro His Ile Ile Val Gln  
 490 495 500  
 tgaaccaacc actgagccgg caactccggc gcatgaatga gagaaataat tattagatcg 1657  
 ccgattttgta attataattg ataatgtaat taaattaaat acgtggttga aacgcacacg 1717  
 tctccataac aaagtcttaa gacattaaat tatgataaat ttacatattg tagttaagtc 1777  
 gagtgttgat ggaaatttta gccggcgcaa ggagtttcgt gaaggctctgt atatattttt 1837  
 tcttattggt gtatattgta tcgttggtca tgttttcttt caggaagtga gctttgtact 1897  
 gtttgtttct tcgatggcag gtgcacttca gttcaggctg aaatttccat taacatttat 1957  
 ttaaacaat gtgatgttga ctaggatgtt atacagataa atgttgacgt gtataatttg 2017  
 ttaaataaaa caatattaat tactattact aaacgatatt ataaacgaag tactaacgag 2077  
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 aatgagggat cacagatgat gacaaaaaac cttaggggtat ataagtaatg tacataatgg 2377  
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 aattcgatta gcgattgtcg ctgcgtctac tttgatacat atcgatttga atcgatattg 2497  
 tataaattta gatagatcgg acattagtaa tgagtatgga cgttttaatt tttaaaaaag 2557

Mo5176new.txt

aatgtactac gaagattaaa tccaggaatt gttaaacagt tatggaattg ataagaaatc 2617  
aacaattaat acggaaccaa aggtagacta ggtgtagcat caggagattg aattaaaaca 2677  
taaattagga ccgacttaaa tggaacttgc gagtgtattg ataacttttt aatttaaaaa 2737  
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tcagaaatag tcattaatta ggaatcgggt tgtgttaatg ttatgcttag cgaaaatatt 2917  
acaatgctgt tgatatcact aaccatcacg taaccatatt gataaaatgt aaatacagaa 2977  
tattgcggtg tgtatttgta tataaatttt agaaaaaaaa aaaaaaaaaa aactcgagag 3037  
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tacccaattc gc 3109

<210> 6  
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<212> PRT  
<213> *Heliothis virescens*

<400> 6  
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Ser Glu Gln Gly Pro His Glu Lys Arg Leu Leu Asn Ala Leu Leu Ala  
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Asn Tyr Asn Thr Leu Glu Arg Pro Val Ala Asn Glu Ser Glu Pro Leu  
35 40 45  
Glu Val Arg Phe Gly Leu Thr Leu Gln Gln Ile Ile Asp Val Asp Glu  
50 55 60  
Lys Asn Gln Leu Leu Ile Thr Asn Ile Trp Leu Ser Leu Glu Trp Asn  
65 70 75 80  
Asp Tyr Asn Leu Arg Trp Asn Asp Ser Glu Tyr Gly Gly Val Lys Asp  
85 90 95  
Leu Arg Ile Thr Pro Asn Lys Leu Trp Lys Pro Asp Val Leu Met Tyr  
100 105 110  
Asn Ser Ala Asp Glu Gly Phe Asp Gly Thr Tyr Gln Thr Asn Val Val  
115 120 125  
Val Arg Ser Gly Gly Ser Cys Leu Tyr Val Pro Pro Gly Ile Phe Lys  
130 135 140  
Ser Thr Cys Lys Met Asp Ile Ala Trp Phe Pro Phe Asp Asp Gln His  
145 150 155 160  
Cys Asp Met Lys Phe Gly Ser Trp Thr Tyr Asp Gly Asn Gln Leu Asp  
165 170 175  
Leu Val Leu Lys Asp Glu Ala Gly Gly Asp Leu Ser Asp Phe Ile Thr  
180 185 190

Asn Gly Glu Trp Tyr Leu Ile Gly Met Pro Gly Lys Lys Asn Thr Ile  
 195 200 205  
 Thr Tyr Ala Cys Cys Pro Glu Pro Tyr Val Asp Val Thr Phe Thr Ile  
 210 215 220  
 Met Ile Arg Arg Arg Thr Leu Tyr Tyr Phe Phe Asn Leu Ile Val Pro  
 225 230 235 240  
 Cys Val Leu Ile Ser Ser Met Ala Leu Leu Gly Phe Thr Leu Pro Pro  
 245 250 255  
 Asp Ser Gly Glu Lys Leu Thr Leu Gly Val Thr Ile Leu Leu Ser Leu  
 260 265 270  
 Thr Val Phe Leu Asn Leu Val Ala Glu Thr Leu Pro Gln Val Ser Asp  
 275 280 285  
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 Ser Phe Val Arg Pro Ser Thr Met Glu Asp Val Gly Gly Gly Leu Gly  
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